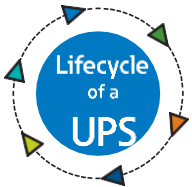


Lifecycle maintenance schedule

The following chart shows the theoretical life of a typical 3 phase UPS. For components marked ♦, Eaton recommends annual preventive maintenance (PM) inspections. During a PM Eaton inspects, tests, calibrates, updates, and cleans components (as applicable). For components marked ♦♦, Eaton recommends proactive replacement in the year indicated based on the service life of the component. Note, actual component life will vary and is based on a wide range of factors (load, temperature, humidity, dust and dirt collection, and environmental contaminants). During the PM Eaton will recommend any proactive replacements or updates^{1,2} that are required. PredictPulse can further sharpen proactive replacement recommendations by monitoring sensor data in real-time and predicting the optimal replacement schedule based on Eaton service history.

Recommendations for 10+ kVA UPSs (varies by model)

	Year																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Preventive maintenance (PM) visits																				
UPS PM	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Battery PM	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Performance testing (Load Bank, IR Scan, PQ Meter)			♦			♦			♦			♦			♦			♦		
PDU/RPP/SBM PM			♦			♦			♦			♦			♦			♦		
Electronic components (♦♦ Eaton recommends proactive replacement)³																				
Uninterruptible Power Modules (UPMs)	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Interface Boards (UPM & ISBM)	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Control Boards (UPM & ISBM)	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Power Supplies (UPM & ISBM)	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Resistor Boards (ISBM)	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Communication Service Boards (CSB)	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Static switch	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Contactors	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Display	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
UPS replacement (alternative to electronic replacements)	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Consumable components (♦♦ Eaton recommends proactive replacement)³																				
Batteries (VRLA) on average ⁴	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Batteries (Wet Cell) on average ⁴	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦
Batteries (Lithium) on average ⁴	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Capacitors (AC, external to UPMs) 9390, 9395 ⁵	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Capacitors (DC, internal to UPMs) 9390, 9395 ⁵	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	♦	♦	♦	♦	♦	♦	♦	♦♦
Capacitors (AC & DC, internal to UPMs) 9155, 9355, 93E ⁵	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Capacitors (AC & DC external & internal to UPMs) 9395P, 9395C ⁵	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Capacitors (AC & DC external & internal to UPMs) 93PM 480V ⁵	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Capacitors (AC & DC internal to UPMs) 93PM 208V ⁵	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Fans ⁵	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Air filters ⁵	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Eaton lifecycle service offerings																				
		Plan – Power infrastructure assessment, design assistance, product customization Install – Factory witness testing, assembly & startup, load bank testing Maintain – Service agreements, preventive maintenance, IR scanning, PQ metering, spare parts kits Monitor – PredictPulse, Cellwatch, VCOM & VPM Update – Battery, capacitor & fan replacements, UPS electronics replacements (SLEP), ESS/VMMS upgrades, kVA upgrades, SBM retrofits Retire – EOSL notification, de-installation & removal, fair market value recovery, environmentally responsible recycling																		

¹ Firmware updates are performed as necessary with customer approval. Parts if required are included at no charge for customers with service agreements with full parts coverage, otherwise billable.
² Field Service Bulletins are evaluated for potential updates. Parts if required are included at no charge for customers with service agreements with full parts coverage, otherwise billable.
³ Proactive full replacements of batteries, capacitors, fans, and UPS electronics (SLEP) are not covered under UPS or battery PMs, nor under standard Eaton service agreements, but can be purchased separately.
⁴ Eaton recommends full replacement of sealed batteries between 3–5 years of age and flooded batteries between 12–15 years of age.
⁵ Individual parts are replaced as applicable and necessary during PM visits. Parts if required are included at no charge under service agreements with full parts coverage, otherwise billable.